

REMARKS

At the time of the Office Action dated March 11, 2004, claims 1-71 were pending in this application. Of those claims, claims 1-7, 15-26, 38-44, 60-62 and 66-71 have been rejected and claims 8-14 and 63-65 have been withdrawn from consideration pursuant to the provisions of 37 C.F.R. § 1.142(b). Applicants acknowledge, with appreciation, the Examiner's allowance of claims 27-37 and 45-59. Independent claims 1, 15 and 38 have been amended. Applicants submit that the present Amendment does not generate any new matter issue.

CLAIMS 1, 7, 15-26 AND 38-44 ARE REJECTED UNDER 35 U.S.C. § 102 FOR ANTICIPATION OR, IN THE ALTERNATIVE, UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS, BASED UPON MITSUI, U.S. PATENT NO. 5,635,315 (HEREINAFTER MITSUI '315)

On page two of the Office Action, the Examiner admitted that Mitsui '315 does not teach that the phase shifter film is formed by long throw sputtering. Instead, the Examiner asserted that "Applicant has not claimed unique structures for the film." This rejection is respectfully traversed.

Initially, Applicants note that independent claims 1 and 38 have been amended to recite that the phase shifter film is configured to be exposed with ArF laser wavelength. Mitsui '315 is directed to an exposure method in which an i-line (365 nm) is used as the exposure wavelength (column 4, line 45). Other examples include a g-ray (436 nm) or KrF laser (248 nm) is used (column 7, lines 19-22). However, Applicants were unable to find conditions acceptable for use with a ArF laser (193 nm) using phase shifter films of the prior art. By forming the phase shifter film by reactive long throw sputtering, Applicants are able to produce a phase shifter film that is configured to be exposed with ArF laser wavelength. Independent claim 15 has also been

similarly amended to recite that the blanks for the phase shift mask are configured for exposure with ArF laser wavelength. Thus, independent claims 1, 15 and 38 distinguish the claimed invention over Mitsui '315.

Applicants further note that the Examiner's statements in the current Office Action contain both misstatements and misapplications of the law. To summarize these errors, the Examiner is under the mistaken belief that process limitations in a device claim cannot be used to structurally limit the device "where no structure or unique function is recited." Although Applicants previously made the following argument, it bears repeating since this argument appears to have been completely ignored by the Examiner.

The case law is clear that a product-by-process limitation must be considered by the Examiner in making a determination of novelty or obviousness. Although the Examiner has a reduced burden of proof with regard to product-by-process claims, as discussed in M.P.E.P. § 2113, the Examiner must first provide a rationale to show that the claimed product and prior art products actually do appear to be identical or substantially identical. As discussed above, the Examiner has failed to make any reasoned argument as to why the claimed phase shifter film, which is formed using a long throw sputtering device, is identical or substantially identical to the phase shift film of Mitsui '315. Therefore, the Examiner has failed to meet the requirements established by case law and M.P.E.P. § 2113 regarding product-by-process limitations.

For ease of reference, the following is a direct quote from M.P.E.P. § 2113:

Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. (emphasis added)

Therefore, prior to the burden shifting to Applicants, the Examiner is required to provide a rationale that shows why the claimed product would be the same as that of the prior art. For example, such a rationale could be found in a hypothetical teaching that the characteristics of a film formed by long-throw sputtering would be the same as a film formed by one of the methods disclosed by the applied prior art. The Examiner, however, has failed to supply any rationale.

In the first full paragraph of page 3 of the Office Action, the Examiner wrote the following:

The method of forming the products is accorded little weight in these product-by-process claims where no structure or unique function is recited. Mitsui does not teach that the films are formed by a long throw sputtering device or method; however a MoSiON film formed by any method would function as well as the instant film, blank or mask.

By requiring that Applicants recite a structure or unique function, the Examiner is prematurely shifting the burden to Applicants before the Examiner has stated any rationale for the belief that "a MoSiON film formed by any method would function as well as the instant film, blank or mask." Furthermore, whether or not a MoSiON film formed by other method would function as well as the claimed film, blank or mask, is immaterial to a novelty or obviousness rejection. The device claims are directed to structure not function.

On page nine of the Office Action, in responding to Applicants' prior arguments that the claimed film is different than the film of the applied prior art, the Examiner stated "Applicant's [sic] arguments are not persuasive and are mere unsubstantiated allegations." Applicants' arguments are based on the substantial data supplied in the specification. In contrast, the Examiner's assertion that "a MoSiON film formed by any method would function as well as the instant film, blank or mask" is based on no data whatsoever. In this regard, Applicants posit it is the Examiner's argument that is "mere unsubstantiated allegations" and not the arguments presented by Applicants.

The Examiner's belief that process limitations should be accorded little weight to structurally define products is both legally and factually erroneous. Using a different fact pattern that raises the same issues, consider the following claims.

1. A steel widget formed by powder metallurgy.
2. A steel widget formed by stamping.
3. A steel widget formed by forging.
4. A steel widget formed by machining.

Assuming that the prior art shows an otherwise identical steel widget formed by casting, it is indisputable that one skilled in the art would recognize that significant structural differences exist between the claimed steel widgets formed by powder metallurgy, stamping, forging, and machining and the steel widget of the prior art formed by casting. Each of these different "product-by-process" limitations define structural characteristics of the steel widget. The difference in structural characteristics can be found in the different microstructure of the different steel widgets and are manifested in the different properties (e.g., hardness, modulus of elasticity, tensile strength) of the steel.

The notion that process limitations are not structurally defining may have some relevance in the chemical arts, where otherwise identical chemical products may be made by different processes. However, in the mechanical/metallurgical arts, the manner in which a particular device is made is typically considered to be a critical factor in the final structure of the device. As noted above, by simply describing a steel widget as being formed by powder metallurgy, stamping, forging, machining or casting, the steel widget has been structurally defined. Similarly, by reciting that the claimed film is formed by reactive long throw sputtering, Applicants have structurally defined the claimed invention. By failing to give any weight to the recited process limitations, as these limitations affect the structure of the claimed device, the

Examiner has erred both legally and factually. Therefore, for the reasons stated above, Applicants respectfully solicit withdrawal of the imposed rejections of claims 1, 7, 15-26 and 38-44 for anticipation or obviousness based upon Mitsui '315.

CLAIMS 60-62 ARE REJECTED UNDER 35 U.S.C. § 102 FOR ANTICIPATION OR, IN THE ALTERNATIVE, UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS, BASED UPON MITSUI, U.S. PATENT NO. 5,942,356 (HEREINAFTER MITSUI '356)

On page three of the Office Action, the Examiner asserted that Mitsui '356 identically discloses the claimed invention. This rejection is respectfully traversed.

Independent claim 60 recites a "phase shifter film ... formed by using a reactive long throw sputtering device." As in the prior rejection, the Examiner admitted that that Mitsui '356 does not teach that the phase shifter film is formed by a long throw sputtering device or method. Therefore, by the Examiner's own admission, Mitsui fails to identically describe the claimed invention, as recited in independent claim 60, within the meaning of 35 U.S.C. § 102.

Similar to the prior rejection, the Examiner also stated the following on page three of the Office Action:

The devices are not formed, using the PSM with a film deposited by long throw sputtering – however the devices would function as well as that of the instant claim irrespective of the method of manufacture.

Again, similar to the prior rejection, the Examiner has not put forth any rationale for the belief that the device would function as well as the claimed device/method. Further, whether or not the device of Mitsui '356 "would function as well" is irrelevant to whether or not the claimed device/method distinguishes the claimed invention over Mitsui '356. Since the Examiner has failed to establish that Mitsui '356 teaches or suggests the claimed invention, Applicants solicit

withdrawal of the imposed rejection of claims 60-62 for anticipation or obviousness based upon Mitsui '356.

CLAIMS 66-71 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON MITSUI '315 IN VIEW OF MITSUI '356 AND FURTHER IN VIEW OF ISAO ET AL., U.S. PATENT NO. 5,605,776 (HEREINAFTER ISAO)

On page four of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the teachings of Mitsui '315 in view of Isao and Mitsui '356 to arrive at the claimed invention. This rejection is respectfully traversed.

Claims 66-71 are dependent from independent claim 1, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 103 for obviousness based upon Mitsui '315. Specifically, Mitsui '315 fails to teach or suggest the phase shift film of the claimed invention. The Examiner's additional references to Mitsui '356 and Isao, however, do not cure the argued deficiencies of Mitsui '315. Applicants, therefore, respectfully submit that the imposed rejection of claims 66-71 under 35 U.S.C. § 103 for obviousness based upon Mitsui ' 315 in view of Mitsui '356 and Isao is not viable and, hence, solicit withdrawal thereof.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing

remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT WILL & EMERY LLP



Scott D. Paul
Registration No. 42,984

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 SDP/AJS:kap
Date: June 14, 2004
Facsimile: (202) 756-8087